IPN73-BA

Contents

Specifications summary

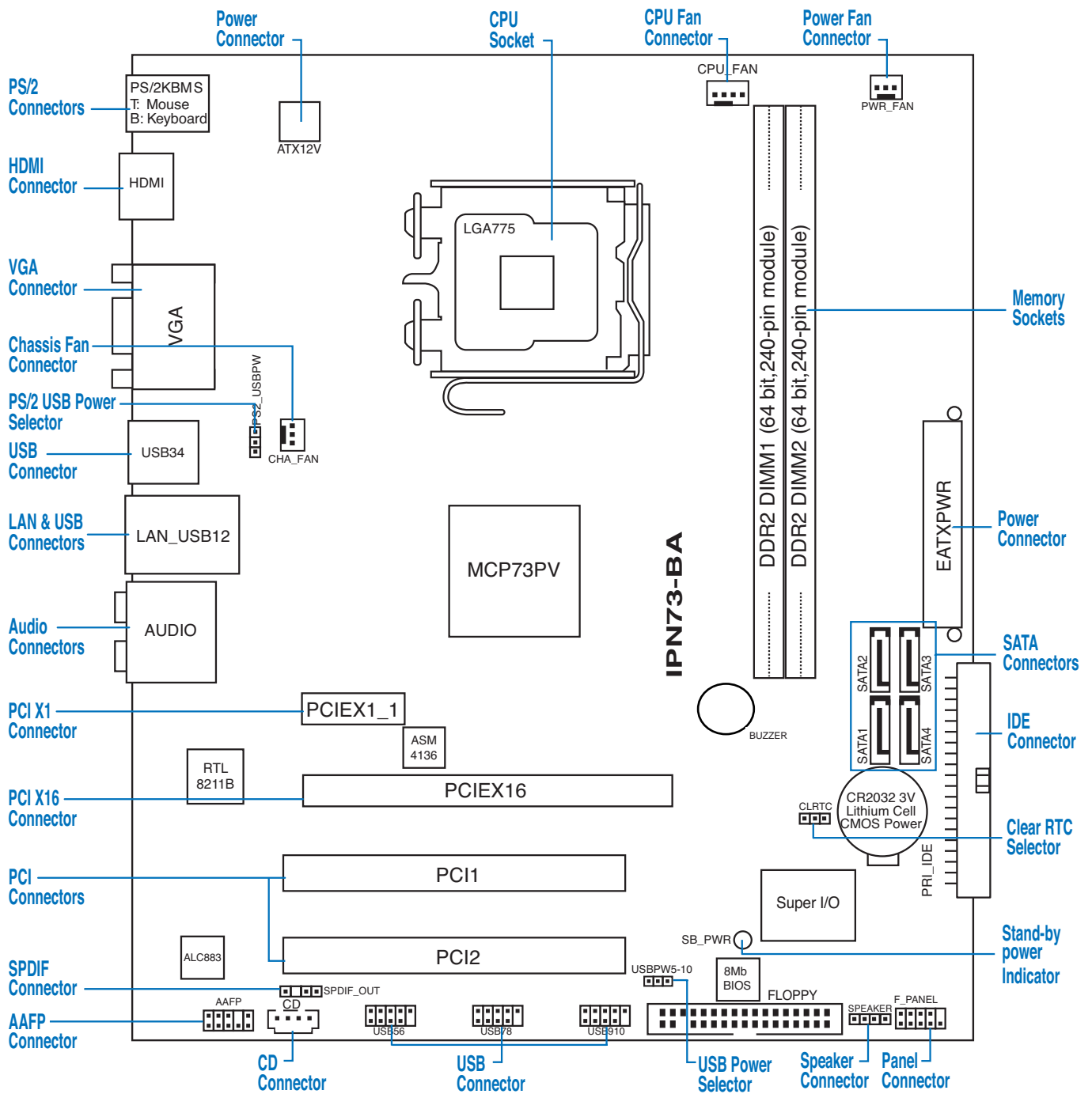|	
CPU	LGA775 socket for Intel® Core™ 2 Quad / Core™ 2 Duo / Pentium® D / Pentium® 4 / Celeron® / compatible with Intel® 06 / 05B / 05A processors (Conroe / Presler / Cedar Mill / Smithfield / Prescott / Conroe-L / Kentsfield / Wolfdale / Yorkfield) TDP: 95W
CPU Features	Supports Intel® next generation 45nm CPU Supports Enhanced Intel SpeedStep® Technology (EIST) Supports Intel® Hyper-Threading Technology
Chipset	North Bridge: NVIDIA GeForce 7100 / nForce 630i
Front Side Bus	1333 / 1066 / 800 / 533 MHz
Memory	Single-channel memory architecture 2 x 240-pin DIMM sockets support unbuffered non-ECC DDR2 800/667/ 533 memory modules, up to 4 GB total system memory
Expansion Slots	1 x PCI Express x16 slot 1 x PCI Express x1 slot 2 x PCI slots
Audio	Azalia Realtek ALC883 8-channel CODEC 1 x Coaxial S/PDIF out port Supports jack-dectect and Anti Pop Function Supports VISTA Premium OS
Storage	Southbridge: 　- 1 x Ultra DMA 133 　- 4 x Serial ATA 3Gb/s devices 　- RAID 0, RAID 1, RAID 0+1, RAID 5, and JBOD configuration
LAN	Realtek 8211B Gigabit
USB	Supports up to 10 USB 2.0 ports (6 ports at mid-board, 4 ports at rear panel
Rear panel	1 x HDMI port 1 x LAN (RJ-45) port 4 x USB 2.0 / 1.1 ports 1 x VGA port 1 x PS/2 keyboard port (purple) 1 x PS/2 mouse port (green) 8-channel audio I/O ports

(Specifications are subject to change without notice.)

Specifications summary
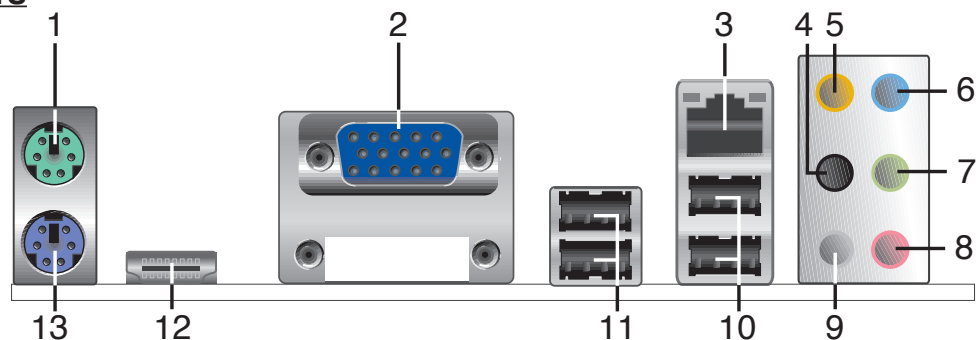
Internal connectors	1 x Floppy disk drive connector 1 x CD audio in connector 1 x 24-pin ATX power connector 1 x 4-pin ATX 12 V power connector 3 x USB connectors for additional six USB 2.0 ports 1 x S/PDIF out connector 1 x Front panel audio connector 1 x CPU Fan connector 1 x Chassis fan connector 1 x Power fan connector 1 x Speaker conncetor 1 x System panel connector
VGA	GeForce 7100 GPU supports maximum resolution of 1920 x1440 bpp (@ 75Hz)
BIOS features	8 Mb Flash ROM, Award BIOS, PnP, DMI2.0, WfM2.0, ACPI v2.0a, SMBIOS 2.5
Power Requirement	ATX power supply (with 24-pin and 4-pin 12V plugs) ATX 12V 2.0 compliant
Manageability	Wake on LAN, PME Wake up supported
Form factor	MicroATX Form Factor: 9.6 inch x 8.6 inch

(Specifications are subject to change without notice.)

IPN73-BA motherboard layout reference

Motherboard layout

Power Connector

CPU Socket

CPU Fan Connector

Power Fan Connector

PS/2 Connectors

PS/2KBMS
T: Mouse
B: Keyboard

CPU_FAN

PWR_FAN

HDMI Connector

HDMI

ATX12V

LGA775

VGA Connector

VGA

DDR2 DIMM1 (64 bit,240-pin module)

DDR2 DIMM2 (64 bit,240-pin module)

Memory Sockets

Chassis Fan Connector

PS/2 USB Power Selector

PS2_USBPW

CHA_FAN

USB Connector

USB34

LAN & USB Connectors

LAN_USB12

MCP73PV

IPN73-BA

EATXPWR

Power Connector

Audio Connectors

AUDIO

BUZZER

SATA2   SATA3

SATA Connectors

PCI X1 Connector

PCIEX1_1

ASM 4136

SATA1   SATA4

IDE Connector

PCI X16 Connector

RTL 8211B

PCIEX16

CLRTC

CR2032 3V Lithium Cell CMOS Power

Clear RTC Selector

PCI Connectors

PCI1

Super I/O

PRI_IDE

SB_PWR

Stand-by power Indicator

SPDIF Connector

ALC883

PCI2

USBPW5-10

8Mb BIOS

AAFP Connector

AAFP

CD

SPDIF_OUT

USB56   USB78   USB910

FLOPPY

SPEAKER   F_PANEL

CD Connector

USB Connector

USB Power Selector

Speaker Connector

Panel Connector

IPN73-BA motherboard layout reference

Rear panel connectors

1. **PS/2 mouse port (green).** This port is for a PS/2 mouse.
2. **Video Graphics Adapter (VGA) port.** This 15-pin port is for a VGA monitor or other VGA-compatible devices.
3. **LAN (RJ-45) port.** Supported by Ü^æ*c^\ Gigabit LAN controller, this port allows Gigabit connection to a Local Area Network (LAN) through a network hub. Refer to the table below for the LAN port LED indications.
4. **Rear Speaker Out port (black).** This port connects the rear speakers in a 4-channel, 6-channel, or 8-channel audio configuration..
5. **Center / Subwoofer port (orange).** This port connects the center / subwoofer speakers.
6. **Line In port (light blue).** This port connects the tape, CD, DVD player, or other audio sources.
7. **Line Out port (lime).** This port connects a headphone or a speaker. In 4-channel, 6-channel, and 8-channel configuration, the function of this port becomes Front Speaker Out.
8. **Microphone port (pink).** This port connects a microphone.
9. **Side Speaker Out port (gray).** This port connects the side speakers in an 8-channel audio configuration.
10. **USB 2.0 ports 1 and 2.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
11. **USB 2.0 ports 3 and 4.** These two 4-pin Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.
12. **HDMI port.** This port is for a High-Definition Multimedia Interface (HDMI) connector, and is HDCP compliant allowing playback of HD DVD, Blu-Ray and other protected content
13. **PS/2 keyboard port (purple).** This port is for a PS/2 keyboard.
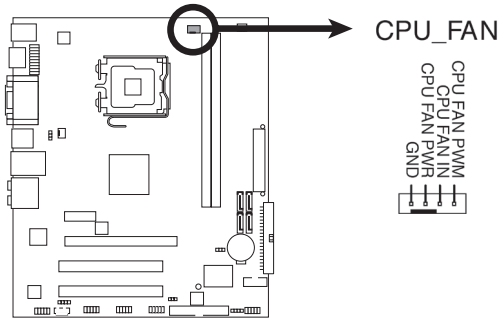
LAN port LED indications

Activity/Link LED		Speed LED	
Status	Description	Status	Description
OFF	No link	OFF	10 Mbps connection
ORANGE	Linked	ORANGE	100 Mbps connection
BLINKING	Data activity	GREEN	1 Gbps connection

ACT/LINK Indicator   SPEED Indicator

LAN port
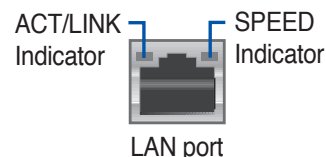
Audio 2, 4, 6, or 8-channel configuration

Port	Headset 2-channel	4-channel	6-channel	8-channel
Light Blue	Line In	Line In	Line In	Line In
Lime	Line Out	Front Speaker Out	Front Speaker Out	Front Speaker Out
Pink	Mic In	Mic In	Mic In	Mic In
Orange	–	–	Center/Subwoofer	Center/Subwoofer
Black	–	Rear Speaker Out	Rear Speaker Out	Rear Speaker Out
Gray	–	–	–	Side Speaker Out

IPN73-BA motherboard layout reference

Internal connectors

CPU_FAN

CPU FAN PWM
CPU FAN IN
CPU FAN PWR
GND

IPN73-BA CPU Fan Connector

SPEAKER

+5V
GND
GND
Speaker Out
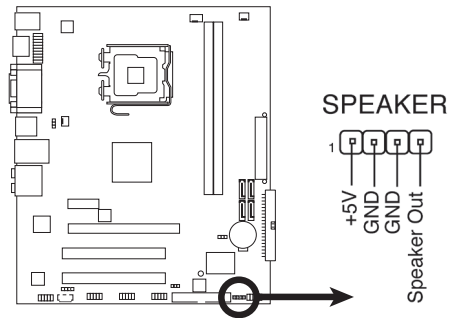
IPN73-BA Speaker Out Connector

Rotation
+12V
GND

PWR_FAN
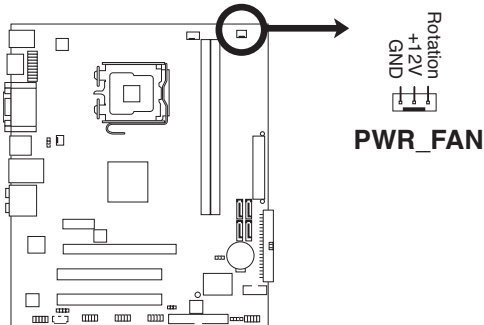
IPN73-BA Power Fan Connector

FLOPPY

PIN 1

NOTE: Orient the red markings on the floppy ribbon cable to PIN 1.
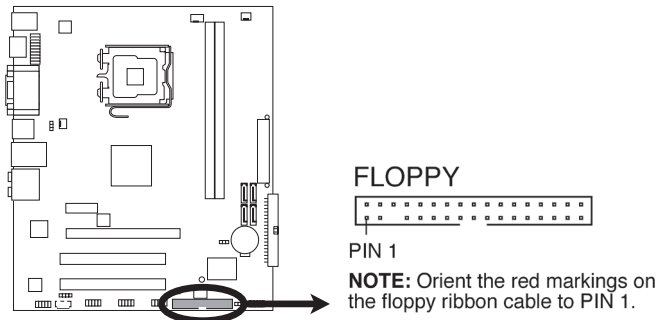
IPN73-BA Floppy Disk Drive Connector

CD
(black)

Left Audio Channel
Ground
Ground
Right Audio Channel
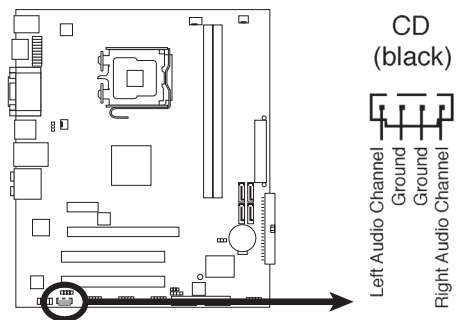
IPN73-BA Internal Audio Connector

PRI_IDE

IPN73-BA IDE Connector

F_PANEL

| PLED | PWRBTN |

PLED+
PLED-
PWR
GND

HDLED+
HDLED-
Ground
Reset

| +HDLED | RESET |
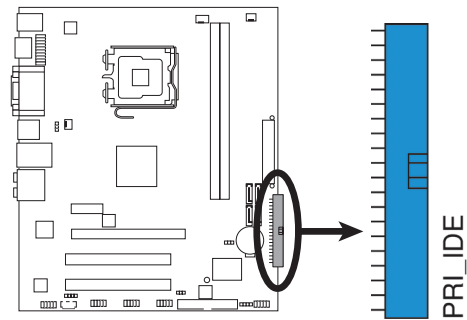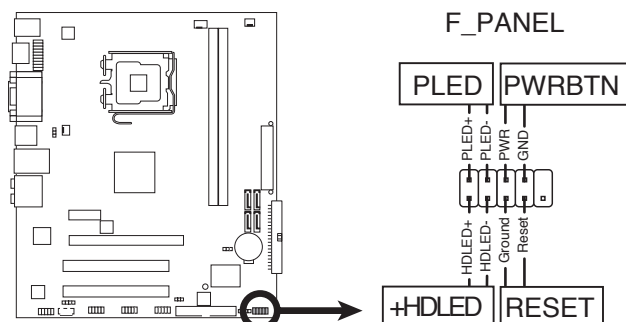
IPN73-BA System Panel Connector

+5V
SPDIFOUT
GND

SPDIF_OUT
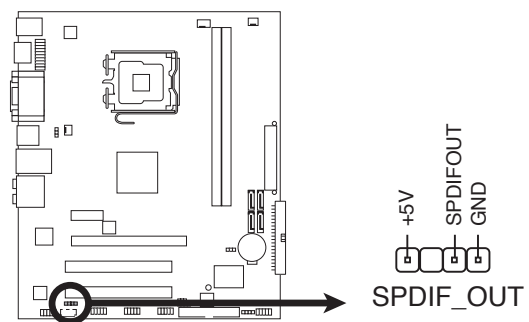
IPN73-BA Digital Audio Connector

Internal connectors (cont.)
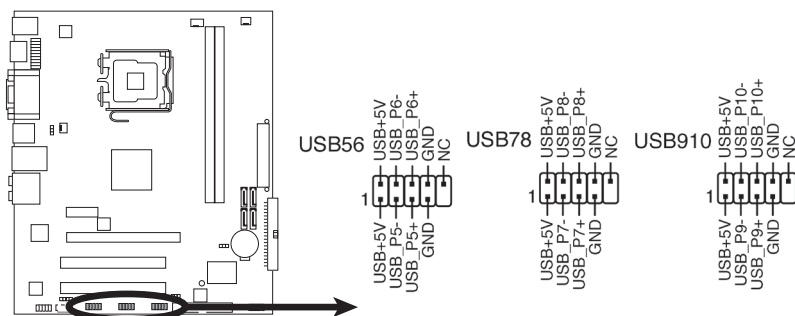
IPN73-BA USB 2.0 Connectors

USB56 — USB+5V, USB_P6-, USB_P6+, GND, NC / USB+5V, USB_P5-, USB_P5+, GND

USB78 — USB+5V, USB_P8-, USB_P8+, GND, NC / USB+5V, USB_P7-, USB_P7+, GND

USB910 — USB+5V, USB_P10-, USB_P10+, GND, NC / USB+5V, USB_P9-, USB_P9+, GND

IN73-BA ATX Power Connector

ATX12V

+12V DC — +12V DC
GND — GND

EATXPWR

+3 Volts	Ground
+12 Volts	+5 Volts
+12 Volts	+5 Volts
+5V Standby	+5 Volts
Power OK	-5 Volts
Ground	Ground
+5 Volts	Ground
Ground	Ground
+5 Volts	PSON#
Ground	Ground
+3 Volts	-12 Volts
+3 Volts	+3 Volts
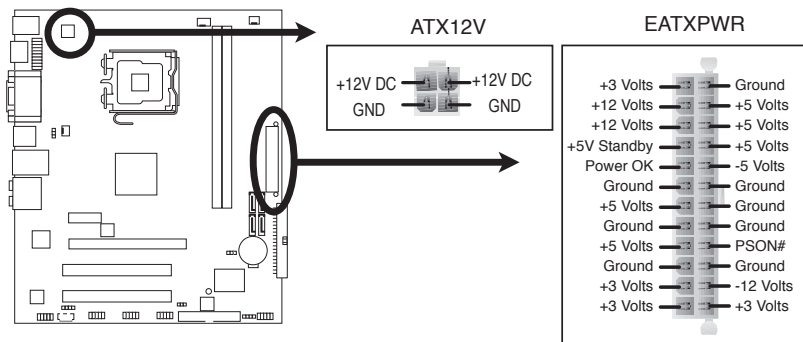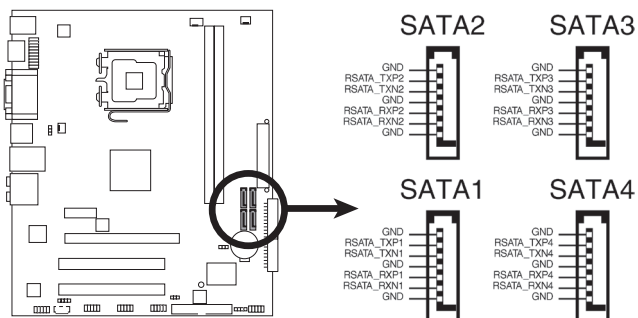
IPN73-BA SATA Connectors

SATA2 — GND, RSATA_TXP2, RSATA_TXN2, GND, RSATA_RXP2, RSATA_RXN2, GND

SATA3 — GND, RSATA_TXP3, RSATA_TXN3, GND, RSATA_RXP3, RSATA_RXN3, GND

SATA1 — GND, RSATA_TXP1, RSATA_TXN1, GND, RSATA_RXP1, RSATA_RXN1, GND

SATA4 — GND, RSATA_TXP4, RSATA_TXN4, GND, RSATA_RXP4, RSATA_RXN4, GND
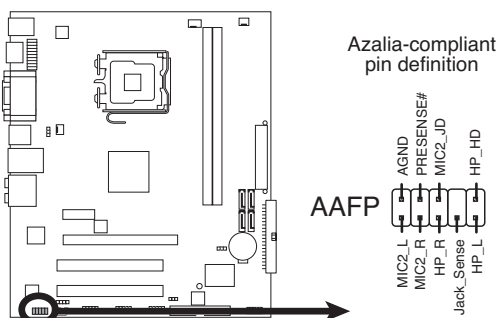
IPN73-BA Front Panel Audio Connector

AAFP

Azalia-compliant pin definition

AGND, PRESENSE#, MIC2_JD, HP_HD

MIC2_L, MIC2_R, HP_R, Jack_Sense, HP_L

BIOS setup program

This motherboard supports a programmable Serial Peripheral Interface (SPI) chip that you can update using the provided utility Managing and updating your BIOS.

Use the BIOS Setup program when you are installing a motherboard, reconfiguring your system, or prompted to "Run Setup". This section explains how to configure your system using this utility.

Even if you are not prompted to use the Setup program, you can change the configuration of your computer in the future. For example, you can enable the security password feature or change the power management settings. This requires you to reconfigure your system using the BIOS Setup program so that the computer can recognize these changes and record them in the CMOS RAM of the SPI chip.

The SPI chip on the motherboard stores the Setup utility. When you start up the computer, the system provides you with the opportunity to run this program. Press <Del> during the Power-On Self-Test (POST) to enter the Setup utility. Otherwise, POST continues with its test routines.

If you wish to enter Setup after POST, reboot the system by doing any of the following procedures:

• Restart using the OS standard shut-down procedure.

• Press <Ctrl>+<Alt>+<Del> simultaneously.

• Press the reset button on the system chassis.

• Press the power button to turn the system off then back on.

> Using the **power button**, **reset button**, or the **<Ctrl>+<Alt>+<Del>** keys to force reset from a running operating system can cause damage to your data or system. We recommend to always shut-down the system properly from the operating system.

The Setup program is designed to make it as easy to use as possible. Being a menu-driven program, it lets you scroll through the various sub-menus and make your selections from the available options using the navigation keys.

> • The default BIOS settings for this motherboard apply for most conditions to ensure optimum performance. If the system becomes unstable after changing any BIOS settings, load the default settings to ensure system compatibility and stability. Select the **Load Default Settings** item under the Exit Menu.
>
> • The BIOS setup screens shown in this section are for reference purposes only, and may not exactly match what you see on your screen.

BIOS menu screen

Menu items   Menu bar   Configuration fields   General help

```
                          Phoenix-AwardBIOS CMOS Setup Utility
  Main    Advanced   Power   Boot   Tools   Exit
 System Time                     0 : 7 : 28              Select Menu
 System Date                     Tue, Jan  1 2008
                                                  Item Specific Help▶
 Legacy Diskette A:              [1.44M, 3.5 in.]
                                                  Change the day, month,
                                                  year and century.
 ▶  Primary IDE Master           [None]
 ▶  Primary IDE Slave            [None]
 ▶  SATA1                        [None]
 ▶  SATA2                        [None]
 ▶  SATA3                        [ST380817AS]
 ▶  SATA4                        [None]
 ▶  HDD SMART Monitoring         [Disabled]

    Installed Memory             512MB
    Usable Memory                383MB



 F1:Help          ↑↓ : Select Item  -/+: Change Value    F5: Setup Defaults
 ESC: Exit        →←: Select Menu  Enter: Select SubMenu  F10: Save and Exit
```

Sub-menu items   Legend bar

Menu bar

The menu bar on top of the screen has the following main items:

Main	For changing the basic system configuration
Advanced	For changing the advanced system settings
Power	For changing the advanced power management (APM) configuration
Boot	For changing the system boot configuration
Exit	For selecting the exit options and loading default settings

To select an item on the menu bar, press the right or left arrow key on the keyboard until the desired item is highlighted.

> • The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.

Legend bar

At the bottom of the Setup screen is a legend bar. The keys in the legend bar allow you to navigate through the various setup menus. The following table lists the keys found in the legend bar with their corresponding functions.

Navigation Key	Function
<F1>	Displays the General Help screen
<F5>	Loads setup default values
<Esc>	Exits the BIOS setup or returns to the main menu from a sub-menu
Left or Right arrow	Selects the menu item to the left or right
Up or Down arrow	Moves the highlight up or down between fields
Page Down or – (minus)	Scrolls backward through the values for the highlighted field
Page Up or + (plus)	Scrolls forward through the values for the highlighted field
<Enter>	Brings up a selection menu for the highlighted field
<F10>	Saves changes and exit

Menu items

The highlighted item on the menu bar displays the specific items for that menu. For example, selecting Main shows the Main menu items.

The other items (Advanced, Power, Boot, and Exit) on the menu bar have their respective menu items.

Sub-menu items

A solid triangle before each item on any menu screen means that the iteam has a sub-menu. To display the sub-menu, select the item and press <Enter>.

Configuration fields

These fields show the values for the menu items. If an item is user-configurable, you can change the value of the field opposite the item. You cannot select an item that is not user-configurable.

A configurable field is enclosed in brackets, and is highlighted when selected. To change the value of a field, select it then press <Enter> to display a list of options. Refer to "Pop-up window."

Pop-up window

Select a menu item then press <Enter> to display a pop-up window with the configuration options for that item.

```
                        Phoenix-Award BIOS CMOS Setup Utility
  Main   Advanced   Power   Boot   Tools   Exit

  System Time                      0 : 14 : 36              Select Menu
  System Date                      Tue, Jan  1 2008
                                                      Item Specific Help▶
  Legacy Diskette A:                     [1.44M, 3.5 in.]
                                                            difies the capacity and
  ▶   Primary IDE Mas┌──────────────────────────────┐ sical size of diskette
  ▶   Primary IDE Sla│   Legacy Diskette A:          │ ve A.
  ▶   SATA1           │                              │
  ▶   SATA2           │ Disabled      ..... [ ]      │
  ▶   SATA3           │ 720K , 3.5 in.  ..... [ ]    │
  ▶   SATA4           │ 1.44M, 3.5 in.  ..... [▮]    │
  ▶   HDD SMART Moni  │                              │
                      │                              │
      Installed Memo  │                              │
      Usable Memory   │  ↑↓ :Move   ENTER:Accept  ESC:Abort │
                      └──────────────────────────────┘

  F1:Help        ↑↓ : Select Item      -/+: Change Value      F5: Setup Defaults
  ESC: Exit      →←: Select Menu        Enter: Select SubMenu   F10: Save and Exit
```

Pop-up menu

General help

At the top right corner of the menu screen is a brief description of the selected item.

Main menu

When you enter the BIOS Setup program, the Main menu screen appears, giving you an overview of the basic system information.
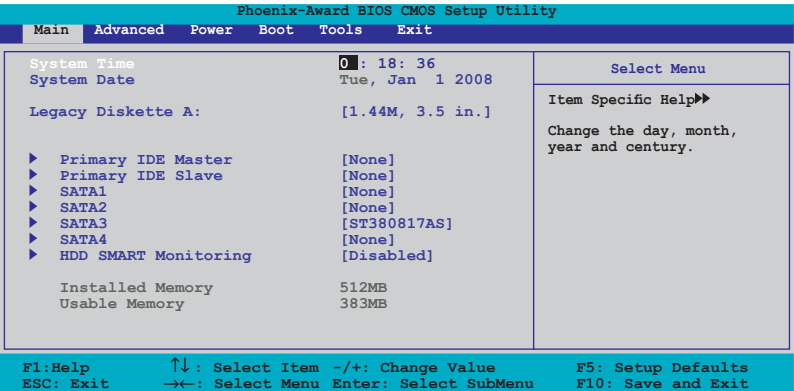
Refer to section "BIOS menu screen" for information on the menu screen items and how to navigate through them.

```
                    Phoenix-Award BIOS CMOS Setup Utility
   Main   Advanced   Power   Boot   Tools   Exit

   System Time                 0 : 18: 36              Select Menu
   System Date                 Tue, Jan  1 2008
                                                   Item Specific Help
   Legacy Diskette A:          [1.44M, 3.5 in.]
                                                   Change the day, month,
                                                   year and century.
 ▶  Primary IDE Master         [None]
 ▶  Primary IDE Slave          [None]
 ▶  SATA1                      [None]
 ▶  SATA2                      [None]
 ▶  SATA3                      [ST380817AS]
 ▶  SATA4                      [None]
 ▶  HDD SMART Monitoring       [Disabled]

   Installed Memory            512MB
   Usable Memory               383MB


   F1:Help         ↑↓ : Select Item  -/+: Change Value    F5: Setup Defaults
   ESC: Exit       →←: Select Menu  Enter: Select SubMenu  F10: Save and Exit
```

System Time [xx:xx:xx]

Allows you to set the system time.

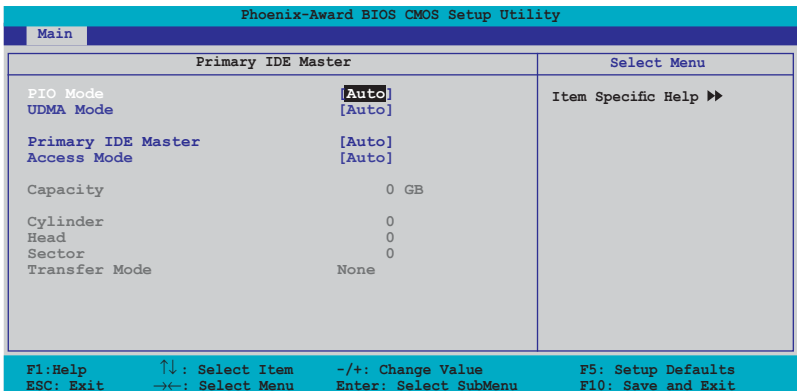### System Date [Day xx/xx/xxxx]

Allows you to set the system date.

Legacy Diskette A [1.44M, 3.5 in.]

Sets the type of floppy drive installed. Configuration options: [Disabled] [720K , 3.5 in.] [1.44M, 3.5 in.]

Primary IDE Master/Slave

While entering Setup, the BIOS automatically detects the presence of IDE devices. There is a separate sub-menu for each IDE device. Select a device item then press <Enter> to display the IDE device information.

```
                     Phoenix-Award BIOS CMOS Setup Utility
  ┌──────────┐
  │   Main   │
  └──────────┘
            Primary IDE Master                       Select Menu

  PIO Mode                        [Auto]        Item Specific Help ▶▶
  UDMA Mode                       [Auto]

  Primary IDE Master              [Auto]
  Access Mode                     [Auto]

  Capacity                        0  GB

  Cylinder                        0
  Head                            0
  Sector                          0
  Transfer Mode                   None




  F1:Help          ↑↓ : Select Item    -/+: Change Value      F5: Setup Defaults
  ESC: Exit        →←: Select Menu      Enter: Select SubMenu   F10: Save and Exit
```

The BIOS automatically detects the values opposite the dimmed items (Capacity, Cylinder, Head, Sector and Transfer Mode). These values are not user-configurable. These items show N/A if no IDE device is installed in the system.

PIO Mode [Auto]

Sets the PIO mode for the IDE device. Configuration options: [Auto] [Mode 0] [Mode 1] [Mode 2] [Mode 3] [Mode 4]

UDMA Mode [Auto]

Disables or sets the UDMA mode. Configuration options: [Disabled] [Auto]

Primary IDE Master/Slave [Auto]

Select [Auto] to automatically detect an IDE hard disk drive. If automatic detection is successful, the BIOS automatically fills in the correct values for the remaining fields on this sub-menu. If the hard disk was already formatted on a previous system, the setup BIOS may detect incorrect parameters. Select [Manual] to manually enter the IDE hard disk drive parameters. If no drive is installed select [None]. Configuration options: [None] [Auto] [Manual]

Access Mode [Auto]

The default [Auto] allows automatic detection of an IDE hard disk drive. Select [CHS] for this item if you set the Primary IDE Master/Slave to [Manual]. Configuration options: [CHS] [LBA] [Large] [Auto]

IPN73-BA motherboard BIOS setup reference

Before attempting to configure a hard disk drive, ensure that you have the correct configuration information supplied by the drive manufacturer. Incorrect settings may cause the system to fail to recognize the installed hard disk.

Capacity

Displays the auto-detected hard disk capacity. This item is not configurable.

Cylinder

Shows the number of the hard disk cylinders. This item is not configurable.

Head

Shows the number of the hard disk read/write heads. This item is not configurable.

Sector

Shows the number of sectors per track. This item is not configurable.

Transfer Mode

Shows the Transfer mode. This item is not configurable.

After entering the IDE hard disk drive information into BIOS, use a disk utility, such as FDISK, to partition and format new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Ensure to set the partition of the Primary IDE hard disk drives to active.

SATA 1-4

While entering Setup, the BIOS automatically detects the presence of Serial ATA devices. There is a separate sub-menu for each SATA device. Select a device item then press <Enter> to display the SATA device information.

```
                  Phoenix-Award BIOS CMOS Setup Utility
    Main

                  SATA 1                        Select Menu

    Extended IDE Drive            [Auto]        Item Specific Help ▶▶
    Access Mode                   [Auto]
                                               Slects the type of
    Capacity                      0 MB          fixed disk connected
                                               to the system.
    Cylinder                      0
    Head                          0
    Landing Zone                  0
    Sector                        0



    F1:Help        ↑↓ : Select Item    -/+: Change Value     F5: Setup Defaults
    ESC: Exit      →←: Select Menu      Enter: Select SubMenu  F10: Save and Exit
```

The BIOS automatically detects the values opposite the dimmed items (Capacity, Cylinder, Head, Precomp, Landing Zone and Sector). These values are not user-configurable. These items show 0 if no SATA device is installed in the system.

Extended IDE Drive [Auto]

Selects the type of fixed disk connected to the system.
Configuration options: [None] [Auto]

Access Mode [Auto]

Sets the sector addressing mode. Configuration options: [Large] [Auto]

> Before attempting to configure a hard disk drive, ensure that you have the correct configuration information supplied by the drive manufacturer. Incorrect settings may cause the system to fail to recognize the installed hard disk.

Capacity

Displays the auto-detected hard disk capacity. This item is not configurable.

Cylinder

Shows the number of the hard disk cylinders. This item is not configurable.

Head

Shows the number of the hard disk read/write heads. This item is not configurable.

Landing Zone

Shows the number of landing zone per track. This item is not configurable.

Sector

Shows the number of sectors per track. This item is not configurable.

After entering the IDE hard disk drive information into BIOS, use a disk utility, such as FDISK, to partition and format new IDE hard disk drives. This is necessary so that you can write or read data from the hard disk. Ensure to set the partition of the Primary IDE hard disk drives to active.

HDD SMART Monitoring [Disabled]

Allows you to enable or disable the HDD Self-Monitoring Analysis and Reporting Technology (SMART) feature. Configuration options: [Disabled] [Enabled]

Installed Memory [xxx MB]

Shows the size of installed memory.
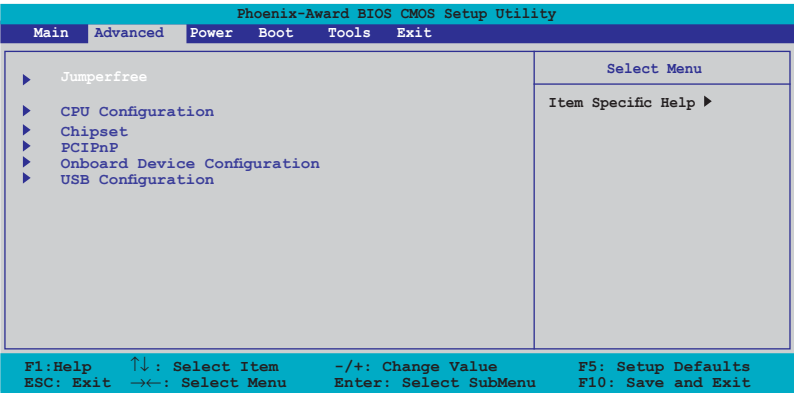
Usable Memory [XXX MB]

Shows the size of usable memory.

Advanced menu

The Advanced menu items allow you to change the settings for the CPU and other system devices.

⚠ Take caution when changing the settings of the Advanced menu items. Incorrect field values can cause the system to malfunction.

```
                    Phoenix-Award BIOS CMOS Setup Utility
    Main   Advanced   Power   Boot   Tools   Exit
  ┌──────────────────────────────────────────┬─────────────────────────────┐
  │                                           │        Select Menu          │
  │ ▶   Jumperfree                            │                             │
  │                                           │  Item Specific Help ▶       │
  │ ▶   CPU Configuration                     │                             │
  │ ▶   Chipset                               │                             │
  │ ▶   PCIPnP                                │                             │
  │ ▶   Onboard Device Configuration          │                             │
  │ ▶   USB Configuration                     │                             │
  │                                           │                             │
  │                                           │                             │
  │                                           │                             │
  │                                           │                             │
  │                                           │                             │
  │                                           │                             │
  │                                           │                             │
  ├──────────────────────────────────────────┴─────────────────────────────┤
  │  F1:Help      ↑↓ : Select Item    -/+: Change Value    F5: Setup Defaults│
  │  ESC: Exit    →←: Select Menu      Enter: Select SubMenu  F10: Save and Exit│
  └──────────────────────────────────────────────────────────────────────────┘
```

CPU Configuration

```
                    Phoenix-Award BIOS CMOS Setup Utility
        Advanced
    ─────────────────────────────────────────────────────────────────
                      CPU Configuration                    Select Menu
      CPU Type            Inter(R) Core(TM)2 CPU    Item Specific Help ▶▶
                          6300 @ 1.86GHz
      CPU Speed           1.86GHz                   Thermal Monitor 1 (On
      Cache RAM           2048K                     die throtting)
      CPU Internal Thermal Control    [Auto]
      Limit CPUID MaxVal              [Disabled]    ThermalMonitor 2
      Enhanced C1 (C1E)               [Disabled]    Ratio & VID transition
      Execute Disable Bit             [Enabled]     )
      Virtualization Technology       [Enabled]
      CPU Multiplier                  [ 7 x]
      Enhanced Intel SpeedStep(tm) Tech.[Enabled]
```

CPU Internal Thermal Control [Auto]

Enables or disables the CPU internal thermal control.
Configuration options: [Auto] [Disabled]

Limit CPUID MaxVal [Disabled]

Enables or disables the Limit CPUID MaxVal technology.
Configuration options: [Disabled] [Enabled]

Enhanced C1 (C1E) [Disabled]

Enables or disables the Enhanced C1 (C1E) technology. The process lowers the
core to bus ratio and VID when physical process enters an enhance C1 state.
Configuration options: [Enable] [Disabled]

Execute Disable Bit [Enabled]

Enables or disables the processor's XD bit feature.
Configuration options: [Enabled] [Disabled]

Virtualization Technology [Enabled]

Enables or disables the Virtualization technology. When enabled, a VMM can
utilize the additional hardware capabilities provided by Vanderpool Technology.
Configuration options: [Enable] [Disabled]

CPU Multiplier [7X]

Allows you to set the CPU multiplier. Configuration options: [Min.=0.0] [Max.=50.0]

Enhanced Intel SpeedStep(tm) Tech [Enabled]

Enables or disables the Enhanced Intel SpeedStep technology to adjust CPU
speed according to CPU workload. Configuration options: [Disabled] [Enabled]

Chipset

```
              Phoenix-Award BIOS CMOS Setup Utility
        Advanced

              Chipset                              Select Menu

   ►  Spread Spectrum Control                    Item Specific Help ▶▶
      Frame Buffer Size          [128MB]
      Primary Display Adapter    [PCI-E]
```

Spread Spectrum Control

```
              Phoenix-Award BIOS CMOS Setup Utility
        Advanced

          Spread Spectrum Control                 Select Menu

   CPU Spread Spectrum          [Disabled]       Item Specific Help ▶▶▶
   SATA Spread Spectrum         [Disabled]
   PCIE Spread Spectrum         [Disabled]
```

CPU/SATA/PCIE Spread Spectrum [Disabled]
Allows you to enable or disabled CPU/SATA/PCIE spread spectrum.
Configuration options: [Disabled] [Enabled]

Frame Buffer Size [128M]

Allows you to set the frame buffer size. Configuration options: [16M] [32M] [64M]
[128M] [256M]

Primary Display Adapter [PCI-E]

Allows you to select the graphics controller to use as the primary boot device.
Conffiguration options: [PCI] [Onboard] [PCI-E]

PCIPnP

```
              Phoenix-Award BIOS CMOS Setup Utility
        Advanced

                PCIPnP                            Select Menu

   Plug & Play O/S              [No]              Item Specific Help ▶▶
```

Plug & Play O/S [No]

When set to [No], the BIOS configures all the devices in the system. When set to
[Yes] and if you install a Plug and Play operating system, the operating system
configures the Plug and Play devices not required for boot.
Configuration options: [No] [Yes]

IPN73-BA motherboard BIOS setup reference

Onboard Device Configuration

```
                    Phoenix-Award BIOS CMOS Setup Utility
         Advanced
    ┌──────────────────────────────────────────────┬─────────────────────┐
    │       Onboard Device Configuration           │    Select Menu      │
    ├──────────────────────────────────────────────┼─────────────────────┤
    │ ▶  IDE Function Setup                         │ Item Specific Help ▶▶│
    │ ▶  Serial-ATA configuration                   │                     │
    │    HD Audio Controller         [Auto]         │                     │
    │    Front Panel Support Type    [HD Audio]     │                     │
    │    HDMI Audio                  [Auto]         │                     │
    │    Intergade HDA Codec         [SPDIF]        │                     │
    │    Onboard nVidia LAN          [Enabled]      │                     │
    │    Onboard LAN Boot ROM        [Disabled]     │                     │
    │    Serial Port1 Address        [3F8/IRQ4]     │                     │
    │    Parallel Port Address       [378/IRQ7]     │                     │
    │    Parallel Port Mode          [ECP]          │                     │
    │ x  EPP Mode Select                EPP1.7      │                     │
    │    ECP Mode Use DMA            [3]            │                     │
    │                                               │                     │
    ├──────────────────────────────────────────────┴─────────────────────┤
    │ F1:Help        ↑↓ : Select Item    -/+: Change Value    F5: Setup Defaults │
    │ ESC: Exit      →←: Select Menu     Enter: Select SubMenu  F10: Save and Exit │
    └─────────────────────────────────────────────────────────────────────┘
```

IDE Function Setup

```
                    Phoenix-Award BIOS CMOS Setup Utility
         Advanced
    ┌──────────────────────────────────────────────┬─────────────────────┐
    │             IDE Function Setup               │    Select Menu      │
    ├──────────────────────────────────────────────┼─────────────────────┤
    │  OnChip IDE Channel0        [Enabled]        │ Item Specific Help ▶ │
    │    IDE DMA transfer access  [Enabled]        │                     │
    │    Serial-ATA Controller    [Enabled]        │                     │
    │    IDE Prefetch Mode        [Enabled]        │                     │
    │                                               │                     │
    └──────────────────────────────────────────────┴─────────────────────┘
```

OnChip IDE Channel 0 [Enabled]
Allows you to enable or disable the OnChip IDE channel 0 controller.
Configuration options: [Disabled] [Enabled]

IDE DAM transfer access [Enabled]
Allows you to enable or disable IDE DMA transfer access .
Configuration options: [Disabled] [Enabled]

Serial-ATA Controller [Enabled]
Allows you to enable or disable the Serial-ATA controller.
Configuration options: [Disabled] [Enabled]

IDE Prefetch Mode [Enabled]
Allows you to enable or disable the IDE prefetch mode.
Configuration options: [Disabled] [Enabled]

Serial-ATA configuration

```
                      Phoenix-Award BIOS CMOS Setup Utility
          Advanced

              Serial-ATA configuration                    Select Menu

        SATA Operation Mode        [IDE]            Item Specific Help ▶▶▶
      X SATA 1                      Disabled
      X SATA 2                      Disabled
      X SATA 3                      Disabled
      X SATA 4                      Disabled
```

SATA Operation Mode [IDE]
Allows you to select SATA operation mode. Configuration options: [IDE]
[RAID] [AHCI].

The following items become user-configurable when the **SATA Operation Mode**
item is set to [RAID].

SATA 1 / 2 / 3 / 4 [Disabled]
Allows you to enable or disable SATA 1 / 2 / 3 / 4. Configuration options: [Disable]
[Enabled]

HD Audio Controller [Auto]

Allows you to enable or disable the HD Audio controller.
Configuration options: [Auto] [Disabled]

Front Panel Support Type [HD Audio]

Allows you to set the front panel audio connector (AAFP) mode to legacy AC`97
or high-definition audio depending on the audio standard that the front panel audio
module supports. Configuration options: [AC97] [HD Audio]

HDMI Audio [Auto]

Allows you to enable or disable the HDMI Audio.
Configuration options: [Auto] [Disabled]

Intergade HDA Codec [SPDIF]

Allows you to select the intergade HDA Codec.
Configuration options: [HDMI] [SPDIF]

Onboard nVidia LAN [Enabled]

Allows you to enable or disable the onboard nVidia LAN device support.
Configuration options: [Disabled] [Enabled]

OnBoard LAN Boot ROM [Disabled]

Allows you to enable or disable the onboard LAN boot ROM.
Configuration options: [Enabled] [Disabled]

USB Configuration

The items in this menu allows you to change the USB-related features. Select an item then press <Enter> to display the configuration options.

```
                    Phoenix-Award BIOS CMOS Setup Utility
        Advanced

                 USB  Configuration                          Select Menu

    USB Controller              [Enabled]          Item Specific Help ▶▶
    USB 2.0 Controller          [Enabled]
    USB Legacy support          [Enabled]          Enable or Disable USB
                                                    1.1 and 2.0 Controller
```

USB Controller [Enabled]

Allows you to enable or disable the USB controller.
Configuration options: [Disabled] [Enabled]

USB 2.0 Controller [Enabled]

Allows you to enable or disable the USB 2.0 controller.
Configuration options: [Disabled] [Enabled]

USB Legacy Support [Enabled]

Allows you to enable or disable support for USB devices on legacy operating systems (OS). Configuration options: [Disabled] [Enabled]

Power menu

The Power menu items allow you to change the settings for the Advanced Configuration and Power Interface (ACPI) and the Advanced Power Management (APM). Select an item then press <Enter> to display the configuration options.

```
                    Phoenix-Award BIOS CMOS Setup Utility
    Main    Advanced    Power      Boot      Tools      Exit

      ACPI Suspend Type           [S1&S3]                  Select Menu
      ACPI APIC support            Enabled
   ►  APM Configuration                                 Item Specific Help
   ►  HardWare Monitor
                                                        Select the ACPI state
                                                        used for System
                                                        Suspend.




    F1:Help          ↑↓ : Select Item  -/+: Change Value    F5: Setup Defaults
    ESC: Exit        →←: Select Menu  Enter: Select SubMenu  F10: Save and Exit
```

ACPI Suspend Type [S1&S3]

Allows you to select the Advanced Configuration and Power Interface (ACPI) state to be used for system suspend. Configuration options: [S1(POS)] [S3(STR)] [S1&S3]

ACPI APIC Support [Enabled]

Allows you to enable or disable the Advanced Configuration and Power Interface (ACPI) support in the Application-Specific Integrated Circuit (ASIC). When set to Enabled, the ACPI APIC table pointer is included in the RSDT pointer list. Configuration options: [Disabled] [Enabled]

APM Configuration

```
                    Phoenix-Award BIOS CMOS Setup Utility
                      Power

                  APM Configuration                        Select Menu

      Restore on AC Power Loss    [Power-Off]           Item Specific Help
      PWR Button < 4 secs         [Instant-Off]
      Power Up On PCI/PCIE Devices [Disabled]          Press [Enter] to
      Power On By External Modems [Disabled]           select whether or not
      Power On by RTC Alarm       [Disabled]           to restart the system
   x  Date (of Month) Alarm        0                   after AC power loss
   x  Alarm Time (hh:mm)          0 :0 : 0
      HPET Support                [Enabled]
      Power On By Keyboard        [Disabled]
      Power On By PS/2 Mouse      [Enabled]



    F1:Help          ↑↓ : Select Item  -/+: Change Value    F5: Setup Defaults
    ESC: Exit        →←: Select Menu  Enter: Select SubMenu  F10: Save and Exit
```

Restore on AC Power Loss [Power Off]

When set to Power Off, the system goes into off state after an AC power loss. When set to Power On, the system goes on after an AC power loss. When set to Configuration options: [Power Off] [Power On] [Last State]

PWR Button < 4 secs [Instant-Off]

Allows you to set the event after the power button is pressed for more than 4 seconds. Configuration options: [Suspend] [Instant-Off]

Power Up On PCI/PCIE Devices [Disabled]

Allows you to enable or disable the PME to wake up from S5 by PCI/PCIE devices & NV Onboard LAN. Configuration options: [Disabled] [Enabled]

Power On By External Modems [Disabled]

This allows either settings of [Enabled] or [Disabled] for powering up the computer when the external modem receives a call while the computer is in Soft-off mode. Configuration options: [Disabled] [Enabled]

> The computer cannot receive or transmit data until the computer and applications are fully running. Thus, connection cannot be made on the first try. Turning an external modem off and then back on while the computer is off causes an initialization string that turns the system power on.

Power On By RTC Alarm [Disabled]

Allows you to enable or disable the power on by RTC alarm.
Configuration options: [Disabled] [Enabled]

> The following items become user-configurable when the **Power On By RTC Alarm** item is set to [Enabled].

To set the date of alarm, highlight this item and press <Enter> to display the Date of Month Alarm pop-up menu. Key-in a value within the specified range then press <Enter>. Configuration options: [Min=0] [Max=31]

Alarm Time (hh:mm) [0:0:0]
To set the time of alarm:

1. Highlight this item and press <Enter> to display a pop-up menu for the hour field.

2. Key-in a value (Min=0, Max=23), then press <Enter>.

3. Press <TAB> to move to the minutes field then press <Enter>.

4. Key-in a minute value (Min=0, Max=59), then press <Enter>.

5. Press <TAB> to move to the seconds field then press <Enter>.

6. Key-in a value (Min=0, Max=59), then press <Enter>.

HPET Support [Enabled]

Allows you to enable or disable HPET (Hardware Precision Efficient Timer) support. The HPET support increases the performance of Vista Multimedia player. Configuration options: [Disabled] [Enabled]

Power On By Keyboard [Disabled]

Allows you to set power on by keyboard. Configuration options: [Disabled] [Ctrl-ESC] [Space Bar] [Power Key]

Power On By PS/2 Mouse [Disabled]

Allows you to enable or disable PS/2 mouse power on the system. Configuration options: [Disabled] [Enabled]

Hardware Monitor

The items in this sub-menu displays the hardware monitor values automatically detected by the BIOS. It also allows you to change CPU Q-Fan feature-related parameters. Select an item then press <Enter> to display the configuration options.

```
            Phoenix-Award BIOS CMOS Setup Utility
                    Power

            Hardware Monitor                        Select Menu

     Q-Fan Function              [Disabled]
  x  CPU Target Temperature      [60°C/140°C]       Item Specific Help ▶▶

     CPU Temperature              48°C/93°F          Enable or Disable Q
     MB Temperature               37°C/98°F          FAN function

     CPU Fan Speed                2909 RPM
     Chassis Fan Speed               0 RPM

     Vcore                       [1.36V]
     Vcc 12V                     [12.14V]
     Vcc 3.3V                    [3.18V]
     Vcc 5V                      [5.05V]
     CPU Fan Speed Warning       [600 RPM]
```

Q-Fan Function [Disabled]

Allows you to enable or disable the Q-Fan function.
Configuration options: [Disabled] [Enabled]

> The following item becomes user-configurable when the **Q-Fan Function** item is set to [Enabled].

CPU Target Temperature [60 ºC / 140 ºF]
Allows you to adjust the CPU target temperature. Configuration options: [10 ºC / 50ºF] [15 ºC / 59 ºF] [20 ºC / 68 ºF]...[85 ºC / 185 ºF].

CPU/MB Temperature

The onboard hardware monitor automatically detects and displays the motherboard and CPU temperatures. These items are not user-configurable.

CPU/Chassis Fan Speed [xxxxRPM]

The onboard hardware monitor automatically detects and displays the CPU, and Chassis fan speeds in rotations per minute (RPM). If any of the fans is not connected to the motherboard, the field shows 0. These items are not user-configurable.
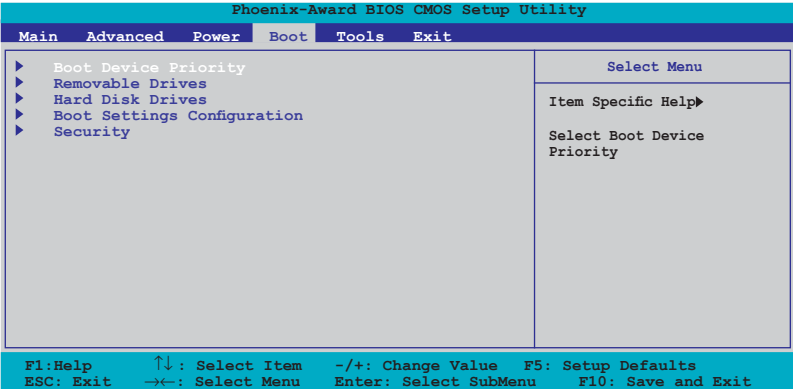
Vcore, Vcc 12, Vcc 3.3V, 5V

The onboard hardware monitor automatically detects the voltage output through the onboard voltage regulators. Configuration options: [xxx] [Ignored]
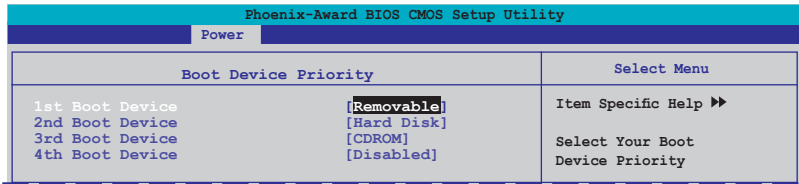
CPU Fan Speed warning [600 RPM]

Sets the CPU fan speed warning feature. Configuration options: [Disabled] [600RPM] [1200RPM] [1600RPM]

Boot menu

The Boot menu items allow you to change the system boot options. Select an item then press <Enter> to display the sub-menu.

```
                    Phoenix-Award BIOS CMOS Setup Utility
  Main   Advanced   Power    Boot   Tools    Exit
 ─────────────────────────────────────────────────────────────────────────
 ▶   Boot Device Priority                          Select Menu
 ▶   Removable Drives
 ▶   Hard Disk Drives                        Item Specific Help▶
 ▶   Boot Settings Configuration
 ▶   Security                                Select Boot Device
                                             Priority




 ─────────────────────────────────────────────────────────────────────────
  F1:Help       ↑↓ : Select Item    -/+: Change Value    F5: Setup Defaults
  ESC: Exit     →←: Select Menu      Enter: Select SubMenu    F10: Save and Exit
```

Boot Device Priority

```
                    Phoenix-Award BIOS CMOS Setup Utility
                 ┌──────────┐
                 │  Power   │
 ─────────────────────────────────────────────────────────────────────────
            Boot Device Priority                    Select Menu

   1st Boot Device          [Removable]      Item Specific Help ▶▶
   2nd Boot Device          [Hard Disk]
   3rd Boot Device          [CDROM]          Select Your Boot
   4th Boot Device          [Disabled]       Device Priority
```
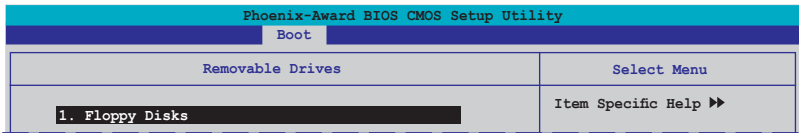
1st ~ 4th Boot Device [Removable]

These items specify the boot device priority sequence from the available devices. The number of device items that appears on the screen depends on the number of devices installed in the system.
Configuration options: [Removable] [Hard Disk] [CDROM] [Disabled]

Removable Drives

```
                    Phoenix-Award BIOS CMOS Setup Utility
                 ┌──────────┐
                 │   Boot   │
 ─────────────────────────────────────────────────────────────────────────
            Removable Drives                         Select Menu

                                              Item Specific Help ▶▶
   1. Floppy Disks
```

1. Floppy Disks

Allows you to assign a removable drive attached to the system.

Hard Disk Drives

```
                Phoenix-Award BIOS CMOS Setup Utility
                           Boot

          Hard Disk Drives                       Select Menu

                                              Item Specific Help ▶▶
    1. 2nd SATA-S: XXXXXXXXX
```

1. 2nd SATA-S; xxxxxxxx

Allows you to assign a hard disk drive attached to the system.

Boot Settings Configuration

```
                Phoenix-Award BIOS CMOS Setup Utility
                           Boot

       Boot Settings Configuration              Select Menu

    Quick Boot              [Enabled]        Item Specific Help ▶▶
    Boot Up Floppy Seek     [Disabled]
    Bootup Num-Lock         [On]             Allows the system to
    Typematic Rate Setting  [Disabled]       skip certain tests
  x  Typematic Rate (Chars/Sec)   6          while booting. This
  x  Typematic Delay (Msec)      250         will decrease the
    Full Screen LOGO        [Enabled]        time needed to boot
    Halt On                 [All Errors]     the
                                             system



    F1:Help      ↑↓ : Select Item    -/+: Change Value    F5: Setup Defaults
    ESC: Exit    →←: Select Menu      Enter: Select SubMenu  F10: Save and Exit
```

Quick Boot [Enabled]

Allows you to enable or disable the system quick boot feature. When Enabled, the system skips certain tests while booting. Configuration options: [Disabled] [Enabled]

Boot Up Floppy Seek [Disabled]

Enables or disables the chassis open status feature. Setting to Enabled, clears the chassis open status. Configuration options: [Disabled] [Enabled]

Bootup Num-Lock [On]

Allows you to select the power-on state for the NumLock.
Configuration options: [Off] [On]

Typematic Rate Setting [Disabled]

Allows you to set the keystroke rate. Enable this item to configure the Typematic Rate (Chars/Sec) and the Typematic Delay (Msec).
Configuration options: [Disabled] [Enabled]

The items Typematic Rate (Chars/Sec) and Typematic Delay (Msec) become user-configurable only when the item Typematic Rate Setting is enabled.

Typematic Rate (Chars/Sec) [6]
Allows you to select the rate at which a character repeats when you hold a key. Configuration options: [6] [8] [10] [12] [15] [20] [24] [30]

Typematic Delay (Msec) [250]
Allows you to set the delay before keystrokes begin to repeat. Configuration options: [250] [500] [750] [1000]

Full Screen LOGO [Enabled]

Allows you to enable or disable the full screen logo display feature.
Configuration options: [Disabled] [Enabled]

Ensure that the above item is set to [Enabled] if you want to use the ASUS MyLogo2™ feature.

Halt On [All Errors]

Allows you to error report type. Configuration options: [All Errors] [No Errors] [All, But Keyboard] [All, But Diskette] [All, But Disk/Key]

Security

```
                    Phoenix-Award BIOS CMOS Setup Utility
                             Boot

                  Security                            Select Menu

    Supervisor Password            Clear          Item Specific Help ▶▶
    User Password                  Clear
    Password Check                 [Setup]
```
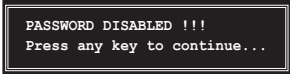
Supervisor Password
User Password

These fields allow you to set passwords:

To set a password:

1.   Select an item then press <Enter>.

2.   Type in a password using a combination of a maximum of eight (8) alpha-
     numeric characters, then press <Enter>.

3.   When prompted, confirm the password by typing the exact characters again,
     then press <Enter>. The password field setting is changed to Set.

To clear the password:

1.   Select the password field and press <Enter> twice. The following message
     appears:

```
    PASSWORD DISABLED !!!
    Press any key to continue...
```

2.   Press any key to continue. The password field setting is changed to Clear.

     A note about passwords
     The Supervisor password is required to enter the BIOS Setup program
     preventing unauthorized access. The User password is required to boot the
     system preventing unauthorized use.

     Forgot your password?

     If you forget your password, you can clear it by erasing the CMOS Real Time
     Clock (RTC) RAM. The RAM data containing the password information is
     powered by the onboard button cell battery. If you need to erase the CMOS
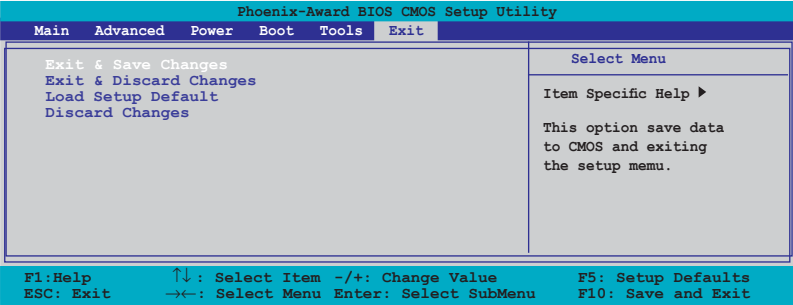   RAM, refer to section "1.9 Jumpers" for instructions.

Password Check

This field requires you to enter the password before entering the BIOS setup or the
system. Select [Setup] to require the password before entering the BIOS Setup.
Select [System] to require the password before entering the system.
Configuration options: [Setup] [System]

Exit menu

The Exit menu items allow you to load the optimal or failsafe default values for the BIOS items, and save or discard your changes to the BIOS items.

```
                   Phoenix-Award BIOS CMOS Setup Utility
    Main   Advanced   Power   Boot   Tools   Exit

                                                    Select Menu
     Exit & Save Changes
     Exit & Discard Changes
     Load Setup Default               Item Specific Help ▶
     Discard Changes
                                      This option save data
                                      to CMOS and exiting
                                      the setup memu.



    F1:Help          ↑↓ : Select Item  -/+: Change Value      F5: Setup Defaults
    ESC: Exit        →←: Select Menu  Enter: Select SubMenu    F10: Save and Exit
```

> Pressing <Esc> does not immediately exit this menu. Select one of the options from this menu or <F10> from the legend bar to exit.

Exit & Save Changes

Once you are finished making your selections, choose this option from the Exit menu to ensure the values you selected are saved to the CMOS RAM. An onboard backup battery sustains the CMOS RAM so it stays on even when the PC is turned off. When you select this option, a confirmation window appears. Select YES to save changes and exit.

> If you attempt to exit the Setup program without saving your changes, the program prompts you with a message asking if you want to save your changes before exiting. Press <Enter> to save the changes while exiting.

Exit & Discard Changes

Select this option only if you do not want to save the changes that you made to the Setup program. If you made changes to fields other than System Date, System Time, and Password, the BIOS asks for a confirmation before exiting.

Load Setup Defaults

This option allows you to load the default values for each of the parameters on the Setup menus. When you select this option or if you press <F5>, a confirmation window appears. Select YES to load default values. Select Exit & Save Changes or make other changes before saving the values to the non-volatile RAM.

Discard Changes

This option allows you to discard the selections you made and restore the previously saved values. After selecting this option, a confirmation appears. Select YES to discard any changes and load the previously saved values.

IPN73-BA motherboard BIOS setup reference